UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/363,823	07/30/1999	KAZUHIRO NAKATA	862.2957	8593

5514   7590   09/10/2002

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER
LAMB, TWYLER MARIE

ART UNIT	PAPER NUMBER
2622	

DATE MAILED: 09/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)	
Office Action Summary	09/363,823	Nakata	
	Examiner	Art Unit	
	Twyler Lamb	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____3____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jun 24, 2002* _____ .

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-18* _____ is/are pending in the application.

    4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-18* _____ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some* c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    *See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). ✓

4) ☐ Interview Summary (PTO-413) Paper No(s). _____

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____

DETAILED ACTION

Notice to Applicant(s)

1.   This action is responsive to the following communications: Amendment A filed on

6/24/02.

2.   This application has been reconsidered. Claims 1-18 are pending.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

4.   Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Oda (US

5,838,888).

In regards to claims 1 and 2, Oda discloses a data processing apparatus and method

(Figure 5, printer 7, col 3, lines 26-27) for processing data stored in a print buffer (Figure 5, print

buffer 18) in an image printing apparatus (Figure 5, printer 7) subjected to time-division drive (col

3, line 64 - col 4, line 8), comprising the step of: rearranging the data in such a manner that one

or more address regions in the print buffer are occupied with one word of data (which reads on

receiving the data in a serial format and converting it to a parallel format and the data being

provided in a data storage table and the table being divided into data areas of 8 bits, which

according to the specification page 7, lines 17-19 represents one word) (col 3, line 64 - col 4, line

11; Figures 9B and 9C, col 4, lines 59-61) corresponding to a plurality of contiguous print

elements provided on a printhead of the image printing apparatus (which reads on distributing the

print data for each dot to the corresponding channels of the printing elements) (col 1, lines 26-30;

col 5, lines 12-21).

In regards to claim 3, Oda also discloses comprising: first storage means for storing data

of a plurality of words (which reads on the data being provided in a data storage table formed on

the print buffer in a matrix form) (Figures 9B-9C, col ; 4, lines 53-59) and delay means for

delaying an amount of data that corresponds to a whole-number multiple of a number of time

divisions employed in time-division drive, said delayed data being from the data that has been read

out of said first storage means ({printing clock}, col 5, lines 10-26).

In regards to claim 4, Oda also discloses wherein storage means for a horizontal-to-

vertical conversion is used as said first storage means (Figure 9A, col 4, lines 61-64).

In regards to claim 5, Oda discloses an image printing apparatus (Figure 5, printer 7, col 3,

lines 26-27) subjected to time-division drive (col 3, line 64 - col 4, line 8) in which n represents

the number of time divisions (which reads on the different printing clock pulses) (Figure 3,

printing clock pulse, col 5, line 49 - col 6, line 23) and one word is composed of m bits (which

reads on the data being provided in a data storage table and the table being divided into data areas

of 8 bits, which according to the specification page 7, lines 17-19 represents one word) (Figures

9B and 9C, col 4, lines 59-61), comprising: data processing means for storing contiguous 1-bit

data (where the lowest common multiple of n and m is 1) in one row within a print buffer, said

data being from data output by driving the apparatus one time (which reads on receiving the data

in a serial format and converting it to a parallel format to the print buffer circuits, and the data

being provided in a data storage table and the table being divided into data areas of 8 bits, which

according to the specification page 7, lines 17-19 represents one word) (col 3, line 64 - col 4, line

11; Figures 9B and 9C, col 4, lines 59-61); wherein n-bit data corresponding to n-number of

contiguous nozzles serves as one unit (which reads on the number of bits of data corresponding to

the channels of the printing elements) (col 1, lines 26-30; col 5, lines 12-21)

In regards to claim 6, Oda discloses an image printing apparatus (Figure 5, printer 7, col 3,

lines 26-27) for processing data in which one word consists of eight bits (which reads on the data

being provided in a data storage table and the table being divided into data areas of 8 bits)

(Figures 9B and 9C, col 4, lines 59-61), comprising: printhead driving means (Figure 10, printing

head driver 19) for discharging ink from four contiguous nozzles of a print head at different

timings (which reads on the data bing provided to a 4-bit shift register and distributed by the 4-bit

shift register to the corresponding channel) (col 5, lines 12-26); a print buffer (Figure 10, 4-bit

shift register 52, col 5, lines 15-20) for outputting image data to said printhead driving means; and

data transfer means (Figure 10, data selector 53, col 19-21) for transferring data to said print

buffer; said data transfer means rearranging sets of 4-bit data, each set of which corresponds to

four contiguous nozzles of the printhead (which reads on the data bing provided to a 4-bit shift

register and distributed by the 4-bit shift register to the corresponding channel) (col 5, lines 12-26), in such a manner that two sets of data are rendered contiguous (which reads on the data being printed without a shift in position) (col 5, line 49 - col 6, line 41).

In regards to claims 7, 8 and 9, Oda discloses a computer-readable memory storing a control program, a method of controlling an image printing apparatus and an image printing apparatus (Figure 5, printer 7, col 3, lines 26-27) subjected to time division drive (col 3, line 64 - col 4, line 8), comprising: storage means for storing image data (Figure 5, print buffer 18); a printhead (Figure 5, print head 21, col 3, lines 47-54) for performing printing based upon the image data read out of said storage means; and means for packing image data (which reads on reading the data into the print buffer) (Figure 8, buffer controller 35, col 4, lines 46-50), which will be printed by driving said print head one time, before the image data is transmitted to said printhead (which reads on reading the data in to the print buffer based on a timing signal) (Figure 8, buffer controller 35, col 4, lines 40-52), the image data being packed in numbers of bits serving as units in which data is read from and written to said storage means (which reads on data being stored in a table divided into data areas) (Figures 9B and 9C, col 4, lines 53-61).

In regards to claims 10, 11, 13 and 16, Oda also discloses wherein the print element comprises a nozzle to discharge ink (Figure 5, printing head 21, Figure 3, nozzles 21a, col 3, lines 51-54).

In regards to claims 12 and 14, Oda discloses a data processing method and apparatus (Figure 5, printer 7, col 3, lines 26-27) for processing data stored in a print buffer (Figure 5, print

buffer 18) in an image printing apparatus (Figure 5, printer 7) which performs printing by causing

a printhead (Figure 5, printing head 21) to scan (col 3, lines 39-45; col 4, lines 12-22), said

printhead having a plurality of print elements arrayed at predetermined angles with respect to the

scanning direction of the printhead (col 3, lines 51-54; col 4, lines 12-15) and subjected to time-

division drive (col 3, line 64 - col 4, line 8), comprising a step of: rearranging the data in such a

manner that one or more address regions in the print buffer are occupied with one word of data

(which reads on receiving the data in a serial format and converting it to a parallel format to the

print buffer circuits, and the data being provided in a data storage table and the table being divided

into data areas of 8 bits, which according to the specification page 7, lines 17-19 represents one

word) (col 3, line 64 - col 4, line 11; Figures 9B and 9C, col 4, lines 59-61) corresponding to a

plurality of contiguous print elements provided on a printhead of the image printing apparatus

(which reads on distributing the print data for each dot to the corresponding channels of the

printing elements) (col 1, lines 26-30; col 5, lines 12-21).

In regards to claim 15, Oda also discloses comprising: first storage means for storing data

of a plurality of words (which reads on the data being provided in a data storage table with 64

rasters formed on the print buffer in a matrix form) (Figures 9B-9C, col ; 4, lines 53-59) and delay

means for delaying an amount of data that corresponds to a whole-number multiple of a number

of time divisions employed in time-division drive, said delayed data being from the data that has

been read out of said first storage means ({printing clock}, col 5, lines 10-26).

With regard to claim 17, Oda also discloses wherein said storage means includes an editing buffer (which reads on the data being corrected before print) (col 6, line 66 - col 7, line 9) and a print buffer (Figure 5, print buffer 18), and wherein the one word of data stored in two or more addresses regions within the editing buffer is rearranged in one address region within the print buffer (col 7, lines 4-17).

With regard to claim 18, Oda also discloses a first register (shift register 54) for storing a whole-number multiple of one word of data; and second register (shift register 56)for storing a set of data that corresponds to contiguous print elements, a number of which is a whole-number multiple of a number of time division drive (col 7, lines 50-65).

Response to Arguments

5.   Applicant's arguments filed 6/24/02 have been fully considered but they are not persuasive.

Applicant argues that Oda does not teach or suggest rearranging one word of data corresponding to a plurality of contiguous print elements provided on the print head, that is stored divisionally in two or mor address regions in the storage means.

In col 4, line 61 -col 5, line 26, Oda shows how the two bites of data are stored in the lower and upper bites and rearranged. In col 1, lines 26-30; col 5, lines 12-21 Oda teaches distributing the print data for each dot to the corresponding channels of the printing elements.

The rejections stand.

Conclusion

6.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the mailing date of this

final action.

7.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Twyler Lamb whose telephone number is (703) 308-8823.

Any inquiry of a general nature or relating to the status of this application should be

directed to the Group receptionist whose telephone number is (703) 305-4700.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, DC 20231

or faxed to:

> (703) 872-9314
>
> (for informal or draft communications, such as proposed amendments to be
>
> discussed at an interview; please label such communications "PROPOSED" or "DRAFT")

or hand-carried to:

> Crystal Park Two
>
> 2121 Crystal Drive
>
> Arlington. VA.
>
> Sixth Floor (Receptionist)

Twyler Lamb
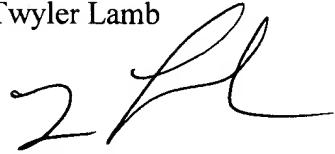
September 9, 2002
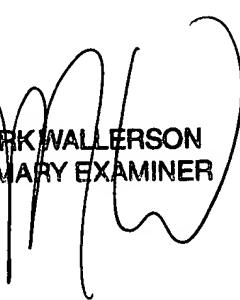
MARK WALLERSON
PRIMARY EXAMINER